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## THE AMERICAN PHYSICAL SOCIETY.

THE American Physical Society held its annual meeting at Columbia University on Thursday, December 27, 1900. The following officers were elected for the year 1901: President, H. A. Rowland; Vice-President, A. A. Michelson; Secretary, Ernest Merritt; Treasurer, W. Hallock; Councillors, Henry Crew and E. B. Rosa.

Professor M. I. Pupin, in a paper on anomalous propagation of electrical waves, called attention to certain peculiar results which he had obtained when trying to improve the telephone transmission of a line, by counteracting its capacity by the introduction of self-induction coils between the outgoing line and the return. By this means he was able to considerably improve the transmission of certain frequencies, but he had not succeeded in reenforcing a sufficient range of frequencies to avoid a serious distortion of the quality of articulate speech.

The discussion by Professors Rowland and Webster and others raised the question as to whether Professor Pupin's abnormal velocity of transmission, considerably above that of light, derived from the relation that velocity is equal to the wave-length divided by the period, is justifiable, since it is doubtful what is to be called the 'wave-length' in a coil.

President Rowland reported that his search for an electromotive force due to dragging a wire through the ether had so far failed, and that it would appear that so far as the limits which he had used were concerned, it was safe to conclude that no positive results are attainable.

In a theoretical consideration of certain magneto-optical phenomena President Rowland pointed out that by considering each of two particles as having quantitatively different charges of electricity, he had been able to deduce formulæ which account for many of the electro-optical effects, as the Zeeman, Faraday and other effects, as well

as refraction, double refraction, dispersion, dispersion in double refraction and absorption. If the charge of one of the particles is practically infinite as compared with the other, then his formulæ reduce to the ordinary ones. If the two charges are equal, no Zeeman effect could take place.

Professor E. F. Nichols presented the results of his investigations upon the energy radiated from certain stars and planets as measured with his radiometer, which proves to be about thirty times as sensitive as the radiomicrometer of Professor Boys. The unit used to express the quantity of energy was the hundred-millionth part of the energy received from a candle at a distance of one meter, *i. e.*,  $10^{-8}$  meter-candle. The results obtained were as follows:—Vega, 0.51, —Arcturus, 1.14,—Jupiter, 2.38,—and Saturn, 0.37.

Two papers by Professor R. W. Wood were read by the Secretary. In the first he outlined the method of making very efficient cyanine prisms and of showing their anomalous dispersion. In the second he called attention to certain peculiarities in the propagation of waves reflected in a spherical mirror.

A brief *résumé* of the work of the Paris Congress of Physics was given by Professor A. W. Webster. The reports of the congress have appeared in three volumes, and a 'Procès Verbaux.' It is of general interest that this congress by its commission on units expressed the belief that it is desirable:

1. That a unit of pressure be used, called the *bary*, which is the C.G.S. unit (that is a dyne per square centimeter). The *megabary*, equal to  $10^6$  C.G.S. units, may, for practical purposes, be considered equal to the pressure of a column of mercury 75 cm. high at  $0^{\circ}\text{C.}$  under normal conditions of gravity.

2. That the *final* results of calorimetric experiments be expressed in the C.G.S. mechanical units (erg and joule).

3. That in the logarithmic subdivision of the spectrum the sections be called 'regions.' The visible region to include the part between  $0.4 \mu$  and  $0.8 \mu$  and bear the index 0, the infra-red regions having positive, and the ultra-violet, negative indices (thus,  $R_2$  from  $3.2 \mu$  to  $1.6 \mu$ ,  $R_1$  from  $1.6 \mu$  to  $0.8 \mu$ ,  $R_0$  from  $0.8 \mu$  to  $0.4 \mu$ ,  $R_{-1}$  from  $0.4 \mu$  to  $0.2 \mu$ , etc.).

4. It is desirable to reserve the word *density* to designate the quotient of mass by volume.

The titles of the papers read were as follows :

'On anomalous propagation of electric waves,' by M. I. Pupin.

'A search after a new source of electromotive force,' by H. A. Rowland.

'The theory of certain magneto-optical phenomena,' by H. A. Rowland.

'On the heat of Arcturus, Vega, Jupiter and Saturn,' by E. F. Nichols.

'On cyanine prisms and a new method of exhibiting anomalous dispersion,' by R. W. Wood.

'On the propagation of cusped waves and their relation to the primary and secondary focal lines,' by R. W. Wood.

WILLIAM HALLOCK.

#### AMERICAN MATHEMATICAL SOCIETY.

THE American Mathematical Society held its seventh annual meeting at Columbia University, New York City, on Friday, December 28, 1900. About forty persons, including thirty-three members of the Society, were in attendance during the two sessions. Vice-President Thomas S. Fiske occupied the chair. A special feature of the meeting was the election of officers and other members of the Council. Under recent amendment of the Constitution, taking effect at this meeting, the president of the Society is elected for a term of two years and is ineligible for immediate reelection. The number of members of the Council elected annually is increased from three to four. This provision with the recent inclusion of ex-presidents as permanent mem-

bers brings the present membership of the Council up to twenty-four. The newly elected officers are : President, Eliakim Hastings Moore; Vice-Presidents, Thomas S. Fiske and Henry S. White; Secretary, F. N. Cole; Treasurer, W. S. Dennett; Librarian, Pomeroy Ladue; Committee of Publication, F. N. Cole, Alexander Ziwet, Frank Morley; Members of the Council to serve for three years, E. W. Brown, H. B. Fine, T. F. Holgate, W. F. Osgood; Members of the Council to serve for two years, E. W. Hyde.

During the six years since its reorganization as a national body, the history of the Society has been one of constant and rapid development. The membership has grown from 244 in 1894 to 357 at present. In 1894 the number of papers read at the meetings was 24; in 1900 it was 115. Since 1894 summer meetings have been regularly held, supplemented on two occasions by colloquia or special courses of lectures. These have done much to bring the members together and to create a more general interest. The rapid expansion of the Society led in 1898 to the formation of the Chicago Section, which fosters the interest of the Society in the West. By the founding of the *Transactions*, which has just completed a very successful first year, improved facilities have been provided for the publication of important papers read before the Society. A gratifying recognition of the Society's usefulness and efficiency is found in the liberal financial cooperation of ten leading universities in the publication of the *Transactions*. The *Bulletin*, which was founded in 1891 as a historical and critical review, has been greatly enlarged, although confining itself more strictly than before to its special field.

The administration of the business of the Society has been wisely left from the beginning in the hands of the Council, the time of the meetings being thus economized for the purely scientific proceedings. The